**Lesson Plan** Ch 6 Day 1

**Course/Lesson**  **Alg 2** 6.1 **Teacher: Phoebe Solek**

**Standards and Benchmarks**

N5 Select and use appropriate computational methods and tools

N7 Justifying reasonableness of solution and verifying results

A1 Translate real-world situations into algebraic expressions, equations and inequalities

A3 Use tables and graphs as tools to interpret algebraic expressions, equations and inequalities

G1 Identifying, describing, comparing, constructing and classifying geometric figures in two and three

dimensions

P1 Model the concepts of variables, functions and relations

P2 Translating between tabular, symbolic or graphic representations of functions

P5 Analyze real-world relationships that can be modeled by elementary functions

**Objective(s)** Graph quadratic functions

Identify minimum and maximum values of quadratic function

**Opening** review of algebra 2 KWL vocabulary (from Edline) page 6 Resource manual

**Strategies**  Power point slides 5 - 22

**Critical Thinking/Questions** Write an expression for the minimum value of a function of the form

Y = a + c where c0. Explain your reasoning. Use your idea to find the minimum value of (page 292 # 54)

**Closing**  review critical question and review KWL worksheet

**Assessment**  p. 291 # 15 – 25; 33 - 43 odd-- use graph paper and be ready to turn in tomorrow.

**Lesson Plan** Ch 6Day 3 & 4

**Course/Lesson Alg 2** 6.2 & Graphing Calculator Investigation **Teacher: Phoebe Solek**

**Standards and Benchmarks**

N3 Use number sense to estimate and determine if solutions are reasonable

N4 Determine whether an exact or approximate answer is necessary

N5 Select and use appropriate computational methods and tools

N7 Justifying reasonableness of solution and verifying results

A1 Translate real-world situations into algebraic expressions, equations and inequalities

A3 Use tables and graphs as tools to interpret algebraic expressions, equations and inequalities

G1 Identifying, describing, comparing, constructing and classifying geometric figures in two and three

dimensions

D2 recognizing that data that relate two variables as linear, exponential or otherwise in nature

P5 Analyze real-world relationships that can be modeled by elementary functions

**Objective(s)** Solve quadratic equations by graphing

Solve quadratic equations by factoring

Write quadratic equations given roots

**Opening**  5 minute check (PP slide # 147

Review p. 291 # 15 – 25; 33 - 43 odd

**Strategies** examples –Power point slides 26 – 44

Linear Regression and Quadratic regression..debate which equation is the best fit?

**Critical Thinking/Questions** What is the difference in a linear regression and a quadratic regression—calculator investigation page 300

**Closing** Review real “roots” or solutions (one, two or none)

**Assessment** Practice 6-2 (on Edline) put in drop box—saved as a PDF file last name-Practice6-2

**Lesson Plan** Ch 6 day 4

**Course/Lesson Alg 2** 6.3 & Quiz **Teacher: Phoebe Solek**

**Standards and Benchmarks**

N3 Use number sense to estimate and determine if solutions are reasonable

N4 Determine whether an exact or approximate answer is necessary

N5 Select and use appropriate computational methods and tools

N7 Justifying reasonableness of solution and verifying results

A1 Translate real-world situations into algebraic expressions, equations and inequalities

A3 Use tables and graphs as tools to interpret algebraic expressions, equations and inequalities

G1 Identifying, describing, comparing, constructing and classifying geometric figures in two and three

dimensions

D2 recognizing that data that relate two variables as linear, exponential or otherwise in nature

P1 Model the concepts of variables, functions and relations P5 Analyze real-world relationships that can

be modeled by elementary functions

**Objective(s):** Quiz

Solve Quadratic equations by factoring

Write a quadratic equation when given roots

**Opening:** short quiz 6-1 to 6-2

Review selected problems Practice 6-2

**Strategies:** Quiz from Resource Ch 6 p. 369 PDF file page 64—need to print and cut in half

Read pages 301 – 303 and complete # 1 – 5 in a One Note file saved as a PDF last name-

CW6-3 and send to my drop box.

Examples from Power point, slides 47 - 59

**Critical Thinking/Questions:** For a quadratic equation of the form ( x – p)(x – q) = 0 , show that the axis of symmetry of the related quadratic function is located halfway between the x-intercept p and q

**Closing:**  Review critical question p. 304 # 47 and p. 303 # 1 - 5

**Assessment:** p. 304 #15 – 43

**Lesson Plan** Ch 6 Day 5 & 6

**Course/Lesson Alg 2** 6.4 and 6.5 **Teacher: Phoebe Solek**

**Standards and Benchmarks**

N5 Select and use appropriate computational methods and tools

N7 Justifying reasonableness of solution and verifying results

A1 Translate real-world situations into algebraic expressions, equations and inequalities

G1 Identifying, describing, comparing, constructing and classifying geometric figures in two and three

dimensions

P5 Analyze real-world relationships that can be modeled by elementary functions

**Objective(s):** Solve quadratic equations by using the Square Root Property

Solve quadratic equations by completing the square

Solve quadratic equations by using the Quadratic formula

Use the discriminant to determine the number and type of roots of a quadratic

**Opening:** 5 minute check—Power point slide 152

Review selected problemsp. 304 #15 – 43

Review Quiz 6-1 to 6-2

**Strategies**: examples Power point slides 62 to 103

**Critical Thinking/Questions:** Find all values of k such that -kx + 9 = 0 has

a) one real root b)two real roots c) no real roots

**Closing:** Review critical question p. 319 # 45 review Key concept and Concept Summary charts p. 316 & 317.

**Assessment:** p. 311 # 25-41 odd p. 318 # 15 – 33 odd

**Lesson Plan** Ch 6 Day 7

**Course/Lesson Alg 2** 6.6 & Graphing Calculator Investigation **Teacher: Phoebe Solek**

**Standards and Benchmarks**

N5 Select and use appropriate computational methods and tools

N7 Justifying reasonableness of solution and verifying results

A1 Translate real-world situations into algebraic expressions, equations and inequalities

A3 Use tables and graphs as tools to interpret algebraic expressions, equations and inequalities

G1 Identifying, describing, comparing, constructing and classifying geometric figures in two and three dimensions

P2 Translating between tabular, symbolic or graphic representations of functions

P3 Recognize the behavior of families of elementary functions, such as polynomial, trigonometric and

exponential functions

P4 analyze the effects of changes in parameters

P5 Analyze real-world relationships that can be modeled by elementary functions

**Objective(s):** graphing calculator investigation

Analyze quadratic functions of the form y = + k

Write a quadratic function in the form y = + k

**Opening:** 5 minute check Power point slide 155

Review selected problems p. 311 # 25-41 odd p. 318 # 15 – 33 odd

**Strategies:** Graphing Calculator activity on Parabolas p. 320 – 321

Examples power point slides 106 to 119

**Critical Thinking/Questions:**  Why is it necessary to have several methods to solve quadratic equations?

When would you use each method?

**Closing:** Review Graphing calculator activity and concept summary on page 323

**Assessment:** Practice 6-6 (upload to Edline)

**Lesson Plan** Ch 6 Day 8 & 9

**Course/Lesson Alg 2** 6.7 & Quiz **Teacher: Phoebe Solek**

**Standards and Benchmarks**

N5 Select and use appropriate computational methods and tools

N7 Justifying reasonableness of solution and verifying results

A1 Translate real-world situations into algebraic expressions, equations and inequalities

A3 Use tables and graphs as tools to interpret algebraic expressions, equations and inequalities

G1 Identifying, describing, comparing, constructing and classifying geometric figures in two and three

dimensions

M3 Estimate, compute and apply physical measurements

M4 Demonstrate the concept of measurement as it applies to real-world experiences

P5 Analyze real-world relationships that can be modeled by elementary functions

**Objective(s):** Quiz

Graph quadratic inequalities in two variables

Solve quadratic inequalities in one variable

**Opening:** Quiz 6-3 and 6-4

Review Practice 6-6

**Strategies:** Power point slides 122 – 142

Students work in Kagan groups to ready presentation of assigned problems

**Critical Thinking/Questions:** Why is it necessary to have several methods to solve quadratic equations?

When would you use each method?

**Closing:** Review testing a value concept p. 332

**Assessment:** p. 333 # 15 – 45 odd

**Lesson Plan Ch 6 Day 10**

**Course/Lesson Alg 2** Review & quiz **Teacher: Phoebe Solek**

**Standards and Benchmarks**

N3 Use number sense to estimate and determine if solutions are reasonable

N4 Determine whether an exact or approximate answer is necessary

N5 Select and use appropriate computational methods and tools

N7 Justifying reasonableness of solution and verifying results

A1 Translate real-world situations into algebraic expressions, equations and inequalities

A3 Use tables and graphs as tools to interpret algebraic expressions, equations and inequalities

M3 Estimate, compute and apply physical measurements

M4 Demonstrate the concept of measurement as it applies to real-world experiences

G1 Identifying, describing, comparing, constructing and classifying geometric figures in two and three

Dimensions

D2 recognizing that data that relate two variables as linear, exponential or otherwise in nature

P1 Model the concepts of variables, functions and relations P5 Analyze real-world relationships that can

be modeled by elementary functions

P2 Translating between tabular, symbolic or graphic representations of functions

P3 Recognize the behavior of families of elementary functions, such as polynomial, trigonometric and

exponential functions

P4 analyze the effects of changes in parameters

P5 Analyze real-world relationships that can be modeled by elementary functions

**Objective(s):** Review concepts and answer questions for Quadratic Equations

**Opening:** Quiz 6-5 and 6-6 (send to print)

Review selected problems p. 333 # 15 – 45 odd

**Strategies:** review all three quizzes from this chapter

Selected problems 338 – 340 based on quiz results

**Critical Thinking/Questions:** Why is it necessary to have several methods to solve quadratic equations?

When would you use each method?

**Closing**: Review critical question

**Assessment:** p. 341 # 1 – 28

**Lesson Plan Ch 6 Day 11**

**Course/Lesson Alg 2** Ch 6 test 9.1 **Teacher: Phoebe Solek**

**Standards and Benchmarks**

N3 Use number sense to estimate and determine if solutions are reasonable

N4 Determine whether an exact or approximate answer is necessary

N5 Select and use appropriate computational methods and tools

N7 Justifying reasonableness of solution and verifying results

A1 Translate real-world situations into algebraic expressions, equations and inequalities

A3 Use tables and graphs as tools to interpret algebraic expressions, equations and inequalities

M3 Estimate, compute and apply physical measurements

M4 Demonstrate the concept of measurement as it applies to real-world experiences

G1 Identifying, describing, comparing, constructing and classifying geometric figures in two and three

Dimensions

D2 recognizing that data that relate two variables as linear, exponential or otherwise in nature

P1 Model the concepts of variables, functions and

P2 Translating between tabular, symbolic or graphic representations of functions

P3 Recognize the behavior of families of elementary functions, such as polynomial, trigonometric and

exponential functions

P4 analyze the effects of changes in parameters

P5 Analyze real-world relationships that can be modeled by elementary functions

**Objective(s):** Assess retention of Chapter 6 objectives

Simplify rational expressions

Simplify complex fractions

**Opening:** Review selected problems from p. 341 # 1 – 28

**Strategies:** Test Ch From 2C or 2D from resource

Examples from power point presentation from Ch 9

**Critical Thinking/Questions:** Why is it necessary to have several methods to solve quadratic equations?

When would you use each method?

**Closing:** Turn in test and begin cumulative review

**Assessment:** Ch 6 Cumulative Review